

PREVENTION OF BLINDNESS AND  
VOCATIONAL REHABILITATION

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# Prevention of Blindness and Vocational Rehabilitation

ELEANOR BROWN MERRILL and VIRGINIA M. SMITH

Organized activities for preventing needless blindness in the United States began in 1908, with determination of a small group of public spirited persons to eliminate blindness from infection at birth. Through their efforts and with financial support from the Russell Sage Foundation, a New York State Committee came into being—first functioning as a part of the New York Association for the Blind, but soon becoming an independent agency with quarters of its own.

In 1915, the New York Committee was reorganized on a national scale to meet the need for more widespread efforts to prevent blindness and conserve vision; with additional foundation help, it was started on the road to independence through support of members and donors throughout the country, now numbering around thirty thousand.

Gradually, since its beginning, the program of the National Society for the Prevention of Blindness has opened up into avenues of activity directed toward every recognizable cause of blindness and impaired vision, as well as the conservation of sight. By various educational methods, the Society has worked to promote hygienic and environmental conditions conducive to eye health in all age groups, and has urged adequate care

for all known conditions which might result in vision loss. Emphasis has been put on safety and eye health in industry, on the discovery and correction of visual difficulties among preschool and school children, on appropriate educational adjustment of children with serious visual handicaps and on the importance of early and adequate attention for eye difficulties of any kind.

## *Advisory and Educational*

As a national public health organization, the National Society stimulates the development of services related to eye health and protection. In this capacity it does not work with individuals, but offers guidance and educational materials to agencies responsible for case-work services related to conservation of vision. The Society does not have branch offices, but from its headquarters in New York is in touch with the prevention programs functioning in nineteen states through departments of health and welfare, and with six existing voluntary state organizations.

A particular objective of all prevention of blindness workers is to have sight conservation measures integrated in the programs of community agencies providing educational and social services. In the field of special education, the National Society provides leadership in promoting special educational

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methods suited to the needs of the partially seeing school child. Teachers for these classes are trained in special university courses, which include detailed information about eye conditions, visual functions and their significance in relation to specific tasks.

The need for medical social workers with special eye training to engage in hospital and community programs has been recognized for some time; to meet this need university courses and special institutes have been developed which deal with the medical and social implications of eye diseases and visual impairments.

Nursing organizations have included information on eye health in basic material distributed to nurses in various types of organizations; the importance of eye health teaching in basic educational programs for nurses is being emphasized.

### ***Conserving Remaining Eyesight***

In cooperation with the War Production Board and other government agencies, the Society is carrying on an extensive program related to the protection and utilization of eyesight in industry. Through this program, industry is encouraged to adopt adequate eye health practices, which include preemployment and periodic eye examinations to determine the quality of visual functions. Hand in hand with this evaluation of visual functions must go an analysis of the visual requirements of specific jobs, since both factors must be considered in order to place the individual in the job for which he is best suited.

While many prevention of blindness activities are related to problems of an adequate rehabilitation program, the

industrial aspects are noted as having a direct bearing on the rehabilitation of visually handicapped, though sighted, individuals. The needs of this group are totally different from those of the blind, since attention must be focused on the value of remaining eyesight. A seeing individual performs a job only as efficiently as his eyes will allow. Every effort should be made, first, to provide him with the maximum amount of vision through what may be possible in the way of treatment and correction; then comes the all-important duty of selecting an occupation which he can pursue successfully despite his lowered vision.

Corrective measures are primarily the responsibility of the ophthalmologist, but an understanding of his findings and recommendations is a prerequisite in planning for satisfactory rehabilitation. The process of seeing is not a single function, and therefore cannot be measured by a single test. For this reason, it is important to consider the various visual functions in which defects may occur and create an employment handicap. Chief among these visual functions are:

*Central visual acuity of each eye.*—Ability to recognize the form of objects in the direct line of vision—tested for distance, near vision and work distance. (The individual is classified according to visual acuity obtained after correction with glasses if such improve vision.)

*Binocular vision.*—Ability to use the two eyes simultaneously to focus on the same object, and to fuse the two images into a single image which gives a correct interpretation of its solidity and its position in space (also referred to as depth perception).

*Muscle action.*—Ability to turn the eyeballs in all directions and to maintain balanced action of the two eyes so that the images fall on corresponding points of the two retinas.

*Peripheral vision.*—Ability to distinguish or perceive presence, motion, or color of objects in the area surrounding the direct line of vision.

*Color vision.*—Ability to discriminate the primary colors: red, green, blue.

Fortunately, processes involved in most jobs do not require perfect coordination of all visual functions. However, ideally, the selection of an occupation should be based on an analysis of the job's visual requirements, as well as an evaluation of the individual's visual functions. Because of variation in the adaptability of persons and in their power of adjustment to handicaps, it is not possible to list jobs suited to individuals with specific visual limitations; however, it is fairly simple to determine by inspection whether a certain type of visual ability is essential in a given occupation.

Review of an occupation with a view to placement should include a check on the working conditions which are directly related to eye comfort and safety. The most important conditions for seeing on a job are lighting, plant housekeeping, work arrangement, and safety provisions. Below are listed certain general principles which apply to all jobs:

*Light* should be well distributed, free from glare, and directed so that it will not shine into the eyes, as well as adequate in amount.

*Plant housekeeping* pertains to proper decoration and care of

equipment and surrounding surfaces to relieve monotony and prevent eye fatigue, or to accentuate areas or objects.

*Arrangement of work* should be such that long periods of close visual work, motion and eye span are relieved to prevent ocular fatigue.

*Safety provisions* should include those protection devices needed to safeguard the eyes of the workman and of his fellow employees.

In many cases of visual disabilities, the proper placement of an individual must be based on what he should be permitted to do, rather than on what he can do. For example, let us assume the presence of a pathological eye condition which may be aggravated by certain activities or surroundings—yet the amount of vision present is ample for the job requirements. Because of such instances as this, ophthalmological guidance for the program of rehabilitating the visually handicapped is essential, even though the ophthalmologist may not be informed about all the processes of rehabilitation. The ideal is to have a consulting ophthalmologist review all eye examination records and make specific recommendations on the basis of the medical information. When this is not possible, another type of professional consultant, such as a medical social worker or a public health nurse, who is a member of the counseling staff, might be given the necessary special preparation and carry on under medical supervision. However, all members of a rehabilitation staff must be made aware of the significance of vision and of visual skills, because of their prime importance in the general rehabilitation plan.



## **Cooperation With Vocational Rehabilitation**

The various channels through which conservation of vision services are provided present special opportunities for cooperation with vocational rehabilitation agencies. Training and placement services offered by rehabilitation agencies should be available to partially seeing children as they complete their school years; and guidance adapted to their particular needs may be planned with aid of the special teacher, who is well prepared to understand the visual problems of her students. On the other hand, special educational methods which have satisfied the needs of the partially seeing school child might be adapted for preparing partially seeing adults for new vocations.

Public health nurses and regular classroom teachers are usually aware of the visual limitations of those children who have not had the opportunity of the special class, either because this is not available, or because their handicaps are not severe enough to warrant admission to the special class. These professional workers can assist in problems of vocational training and placement.

State prevention of blindness workers are in a position to serve as advisers to rehabilitation personnel, since their training in the eye field has prepared them to understand the medical, social and psychological adjustment problems of the visually handicapped. In view of the limited number of qualified persons available for serving the visually handicapped directly, it is advisable to make maximum use on a consultant basis of those trained in the special field.

Their assistance in planning instruction for members of a state rehabilitation staff during a regular in-service training period is a suggested form of cooperation.

Through the program directed to industry, it is anticipated that simple methods of testing visual functions will be developed which may assist rehabilitation workers in determining visual abilities. Industrial plants are being encouraged to analyze their jobs from the viewpoint of visual requirements, through the use of an appraisal form which emphasizes the importance of matching the individual to the job.

The National Society for the Prevention of Blindness is guided in its work by specialists in the various fields who are participating in the conservation of vision effort. Through many sources we are in touch with latest developments in research, and are constantly preparing educational material for distribution. We welcome requests for such material and also the opportunity to cooperate with rehabilitation agencies in developing special instructional matter for use with their programs of in-service training.

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